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5 November 1971

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MEMORANDUM FOR: Acting Chief, Technical Services Group, NPIC
ATTENTION : Chief, Technical Operations Staff, TSG/NPIC
SUBJECT : RED Monthly Report (October 1971)

Significant Items of Interest for October 1971:

1. Image Comparison Microstereoscope. The optical misalignment problem discovered in September was corrected by [] engineers and test and evaluation of the instrument by ESD continued. (The latter is to be completed during November.)

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4. CRT Image Quality Assessment. Several meetings were held between [] the [] committee, OSP, the contract monitor, and our [] consultant to finalize the subject PI test plan for the study. Concurrence on the test plan was achieved except for a few minor points which are now being resolved. The overall project is proceeding essentially on schedule.

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GROUP 1
Excluded from automatic
downgrading and
declassification

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Declass Review by NIMA/DOD

NRO review(s) completed.

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5. Target Indexing Device. All T&E measurements were completed and a T&E acceptance report will be issued in early November. In late October, the equipment had to be moved to accommodate painting of the room. Upon re-positioning the equipment, several malfunctions were noted: (a) laser misalignment and power loss (this was corrected by replacing the original laser); (b) a computer malfunction; and (c) a film "pinch" roller malfunction. These latter two are being corrected. In early November, the TID should be back "on the air" and we will then proceed with evaluation of the great mass of operational film. The software programs are now adequate.

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6. Digital Image Storage Study. The project was approved in October, and a contract negotiated. Preliminary work has commenced.

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7. Wide-Field, High-Power, Anamorphic Stereoviewer. The zoom and upper relay optics are in work and are about two weeks ahead of schedule. Mechanical details for the condenser have been released, as well as those for the 4.5X and 9X objectives. The zoom illumination system is nearing completion. A proposal for altering the convergence angle of the eyepieces is expected momentarily--this modification is required to incorporate the latest human factor information generated by tests.

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8. Diagnostic Computer Routines (for the HPSC). This project is in progress again after considerable delay due to request for additional funds for a change-in-scope.

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9. Stereo Scanning Utility Study. The test imagery selected by IEG is being printed in roll form by Finalization of the detailed test is awaiting some experiments on stereo set-up on the HPSC which will be the testing vehicle for the study.

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11. Automated Coordinate Display. This contract is now proceeding after considerable delay due to a company move of personnel and facilities. Preliminary

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19. [] has submitted acceptance test procedures for the DIA version of the [] light table to RED/SDB for approval. The tests will take place at [] in mid-November. SDB and DIA will perform the tests.

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20. The [] has corrected the deficiencies reported during the T&E of the Roomlight Enlarger/Reader/Printer. ESD is expected to complete the remainder of the test in the near future and the instrument will be turned over to IEG for operational suitability tests.

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21. The group [] which is working on the automatic pointing task of the mensuration contract, has completed their move [] Work has resumed with about one-month delay occurring in the schedule.

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22. Proposals have been received on the following subjects and are being evaluated in RED/SDB:

- a. 15X eyepieces for Zoom []
- b. 3X objective for Zoom []
- c. [] light table microscope bridge stability improvement []
- d. [] split-format light table []
- e. Potential improvement of near UV components for use in image interpretation systems []
- f. Self-radiating screen viewers []
- g. Advanced interpretation system study []
- h. Correction of vibration difficulties with optical equipments []
- i. Universal Calibration Device []
- j. Dry Silver Implementation Plan []
- k. Investigate and devise test and evaluation data sheets []
- l. UV rear projection viewer system study []
- m. A proposal from [] to incorporate programmed search in the Scan & Search PI Station is being evaluated by IEG and RED/SDB.

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23. During the month of October [] developed for RED the RD&E Five-Year Plan for forwarding to TOS and PS/NPIC.

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24. Work with the preliminary evaluation of the [] interaction viewer is continuing, the principal problem area being the development of an appropriate fine grain duplication procedure for the input to the device.

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25. The [] was granted a two-month, no-cost, contract extension. The termination date of the contract is now 31 January 1972.

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27. [] A three-month, time only extension was made to the contract on unconventional film evaluation.

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28. [] visited RED/ATB to review raw data on dry silver testing prior to writing the test report. Although preliminary in nature, an experiment on latent image decay indicated that pronounced changes in density occur when the time period between exposure and development is varied during the first ten minutes. This causes serious variations in speed and gamma if the time period between exposure and development is not kept constant or a ten minute delay is used. This may explain some of the variations in data of several laboratories. Latent image decay of this type is known to occur in high resolution plates or on [] film (an extremely high resolution type conventional film). So far as known, this has not been reported for dry silver. Further work will be done to recommend procedures to reduce the problems associated with latent image decay.

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29. [] An interim report on comparisons of dye stability [] was received. The early results show [] changed very little in comparison []

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30. [] A visit was made [] and a representative [] disclosed that they are currently developing a high resolution (excess of 400 l/pm) color micro-film material that can be adapted for use in continuous tone photography.

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31. Imagery Interpretation Research Program. The Imagery Interpretation Research Program was negotiated on 5 October 1971.

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32. Contact Lens Evaluation. The first phase of an evaluation plan for prescribing contact lenses for photo-interpreters was implemented with the assistance [redacted] personnel and their vision consultants. This team will also evaluate the potential effect upon photointerpreters of a new FDA ruling requiring spectacle lenses being made of impact resistant glass or plastic.

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33. Color Training Associated with Color Photography. [redacted] The Center has received reproducible masters of four technical documents designed to assist in the exploitation of color photography. Included are: glossaries of color terminology, classified and unclassified reviews of the literature on color aerial reconnaissance, and a recommended color vocabulary. Preparations are under way to brief Center management on this program in the near future.

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36. Meetings, Briefings, etc.:

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b. [redacted] attended the three-day SPSE Symposium III on Unconventional Photographic Systems in Washington. Subjects covered were dry silver, electro-photography, free radical, diazo, vesicular, and photopolymer films. Highlights of the meeting were the introduction of some new organic imaging systems with unusually high speeds and resolution, liquid crystal systems, and a renewed interest in diazo systems. Live demonstrations from six companies were given and an excellent round-table wrap-up was held. The need for standardization in reporting film speeds and other properties and the need for evaluating films in terms of specific systems were emphasized.

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d. [redacted] (Ch/An/ORD/DDS&T) and [redacted] (An/ORD/DDS&T) visited RED/ATB on 27 October 1971 to witness a demonstration of the Image Translator scanner and display, and to receive an orientation briefing on ATB activities.

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e. On 21 October 1971 [redacted] accompanied the EXRAND tour of the [redacted] Processing Site for orientation and familiarization purposes.

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f. [redacted] organized and coordinated a demonstration of the [redacted] Zoom Transfer Scope at NPIC on 21 October.

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g. [redacted] attended the Unconventional Photo Systems Conference on 21 October 1971.

37. Training:

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a. [redacted] attended the "Fortran IV" computer programming course from 18 to 29 October 1971.

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b. [redacted] attended the Supervisory Scientists and Engineers, a Management Institute course at the U. S. Civil Service Commission, Bureau of Training, from 18 to 22 October 1971.

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c. Representatives from each of the Center components met with RED representatives from 27-29 October at the [redacted] to review the [redacted] FY-71 Imagery Interpretation Research Program.

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d. [redacted] attended a course on "Project Officer in Contract Cycle" from 18-22 October.

38. Personnel:

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